

Assessing Disparities in Birth Outcomes: An Evaluation of Seattle & King County's *First Steps Program*

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Executive Summary

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² **Authors' efforts:** The PHI Applied Research Fellows share equally in their contributions and responsibilities for the research. The fellows cleaned and analyzed the merged data to evaluate the impact of targeted prenatal care services on adverse birth outcomes using multivariate regression techniques in Stata. In consultation with PHSKC staff, the fellows participated in formation of relevant research questions, study design, analysis, and data visualization. The fellows collated their findings into a presentation to PHSKC stakeholders on August 26, 2019. They also prepared a technical report. Both the presentation and technical report are available upon request.



Introduction

Adequate prenatal care is associated with reduced risk of adverse birth outcomes. In recognition of this fact, access to prenatal care on average in the United States rose steadily from 1990 onward, and plateaued at about 90% in 2010³. While these average rates may be high, they mask significant disparities across age, race, and region, with some groups of pregnant women experiencing prenatal care rates as low as 70%. These persistent differences exist despite nationwide public health investments in prenatal care services and programs from 1990 onward.

Washington State is no exception to national trends. Washington State’s First Steps (FS) program was developed in 1989 as a result of Washington’s Maternity Care Access Act to improve early prenatal care for low-income families who are Medicaid-eligible.⁴ In King County, the Community Health Services Division (CHSD) of Public Health - Seattle & King County (PHSKC) is the largest provider of FS services. Despite successes in improving care for low-income pregnant women, the County has not been able to comprehensively achieve race equitable birth outcomes. CHSD is thus working to redesign and refine the delivery of FS services to better meet client needs and reduce disparities in outcomes.

A major goal of the University of Washington’s Population Health Initiative Applied Research Fellowship was to lay the groundwork for evaluating planned changes to FS services. To achieve this goal, the interdisciplinary team of students conducted a population-based, retrospective cohort study of linked FS enrollment data and King County birth certificate data.

Study Objectives

1. Identify key demographic characteristics associated with enrollment in FS. How are people who enrolled in FS before birth different from those who enrolled after birth?
2. Investigate the effects of FS on key adverse health outcomes (low birth weight, preterm birth [gestational age], and infant mortality). How does the impact of FS on birth outcomes vary by race and ethnicity?

Key Findings - Enrollment

- Compared to women who do not enroll in FS, those who enroll in FS tend to more educated, U.S.-born, non-Hispanic, older, unmarried, and have multiple children.
- Enrollment patterns across racial and ethnic groups remain similar across time, despite declining enrollments.
- Timing of enrollment before birth, which is most beneficial to positive outcomes, varied by race, ethnicity, country of birth, and education, as is reflected in the following table.

| | Enrolled before birth vs. never enrolled |
|-------------------------|--|
| Race | Less likely to be Hispanic or Black |
| Age | More likely to be older |
| Education | More educated |
| Country of birth | More likely to be US-born |
| Marital status | Less likely to be married |

³ Child Trends. 2018. *Late or No Prenatal Care*. <https://www.childtrends.org/indicators/late-or-no-prenatal-care>

⁴ First Steps. Washington State Department of Social and Health Services website . <https://www.dshs.wa.gov/esa/social-services-manual/first-steps>.



Key Findings – Birth Outcomes

- Overall, FS enrollment before birth (as opposed to never enrolling or enrolling after birth) was associated with reduced risk of:
 - Preterm birth (low gestational age)
 - Gestational hypertension
 - Low birth weight
- The beneficial impacts of enrollment in FS before birth varied across racial and ethnic groups when compared with a control group that included women who never enrolled in FS or enrolled after birth.

| | Risk of Preterm Birth (low gestational age) | Risk of Gestational Hypertension | Risk of Low Birthweight |
|--|---|----------------------------------|-------------------------|
| Non-Hispanic Black | No effect | No effect | No effect |
| Non-Hispanic White | Reduced by 20% | No effect | Reduced by 21% |
| Hispanic | Reduced by 18% | Reduced by 30% | No effect |
| Asian and Pacific Islander | Reduced by 25% | Reduced by 39% | Reduced by 23% |
| Multiracial, American Indian, Alaska Native | No effect | No effect | No effect |

Overall Recommendations

- FS is an effective program that reduces poor birth outcomes and should be continued.
- Enrollment in FS during pregnancy is most beneficial to mothers and their infants. FS should therefore improve outreach strategies to increase earlier and timely enrollment of Medicaid-eligible women.
- Strategies for enrollment should be especially targeted towards women who are Black, Hispanic, foreign-born, already married, as well as women with fewer years of education.

Future Opportunities

- American Indian, Alaska Native, and multiracial groups were aggregated into an “Other” group due to small sample sizes. Future analyses should disaggregate these populations, given that American Indian and Alaska Native infants in King County are more than 2.5 times as likely as those born to Asian or White mothers to die before their first birthday, while infants of mixed-race mothers were no more likely than those born to White mothers to die in infancy.⁵
- Analyzing the location of service areas for FS and the location of highest risk patients may inform future delivery care models.
- Understanding which aspects of FS contribute most to its overall success through a process mapping study may help to identify targeted areas to improve or strengthen the program and iteratively test modifications.

⁵ King County Health Needs Assessment: 2018/2019. Public Health Seattle & King County website. <https://www.kingcounty.gov/depts/health/data/community-health-indicators/~media/depts/health/data/documents/2018-2019-Joint-CHNA-Report.ashx>.